AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of forming a microcrystalline thin film, comprising:

supplying, during a first process, $SiH_4$ and $H_2$ to a chamber in which a substrate is located;

during the first process, applying an electric field to break down the $SiH_4$ to $SiH_2$;

supplying, during a second process, $H_2$ but not $SiH_4$ to the chamber;

depositing a portion of the microcrystalline thin film during the second process, wherein depositing the portion comprises adsorbing the $SiH_2$ to a surface of the substrate to form microcrystals, and wherein the portion of the microcrystalline thin film is formed without converting amorphous silicon to the microcrystals; and

performing the first process and second process a plurality of times to form the microcrystalline thin film having a target film thickness on the substrate.

2. (Cancelled)

3. (Previously Presented) The method of claim 1, wherein performing the first process and second process a plurality of times is performed without removing the substrate from the chamber.

4. (Currently Amended) The method of claim [[3]] 26, further comprising applying an electric field in the chamber to break down the $SiH_4$ to $SiH_2$.

5. (Previously Presented) The method of claim 4, wherein supplying the $H_2$ comprises supplying the $H_2$ at a generally constant rate.

6. (Original) The method of claim 4, further comprising depositing the $SiH_2$ to a surface of the substrate during the second process.

7. (Currently Amended) The method of claim [[1]] 26, further comprising:

converting $SiH_4$ to $SiH_2$; and

depositing $SiH_2$ on the substrate during the second process.

8. (Previously Presented) The method of claim 7, wherein depositing $SiH_2$ on the substrate during the second process without supplying $SiH_4$ reduces formation of a polymer due to $SiH_2$ molecules encountering each other prior to depositing of $SiH_2$ on the substrate.

9. (Cancelled)

10. (Previously Presented) The method of claim 28, wherein bonding of $SiH_2$ is suppressed in the source depositing process.

11. (Cancelled)

12. (Previously Presented) The method of claim 28, wherein $H_2$ is supplied at a constant flow rate throughout said source supplying process and said source depositing process.

13. (Previously Presented) The method of claim 28, wherein a flow rate ratio, r, of $SiH_4$ and $H_2$ satisfies $r \geq -(7/12)xP+72.5$, where P is an electric field intensity density irradiated on $SiH_4$ and $H_2$.

14. (Previously Presented) The method of claim 28, wherein performing said source supplying process comprises performing the source supplying process for 2 seconds or less, and performing said source depositing process comprises performing said source depositing process for longer than said source supplying process.

15.-16. (Cancelled)

17. (Previously Presented) A method of manufacturing a thin film transistor comprising:

forming a gate electrode on the substrate;

forming an insulation layer film on said substrate and said gate electrode,

forming at least a portion of a channel layer film on said insulation layer by using the microcrystalline thin film forming method of claim 28; and

forming a source/drain electrode on said channel layer.

18. (Previously Presented) The method of manufacturing a thin film transistor of claim 17, wherein forming the channel layer film comprises forming the microcrystalline thin film up to 1 nm away into the channel layer film from the interface with said insulation layer.

19.-25. (Cancelled)

26. (Currently Amended) ~~The method of claim 1~~ A method of forming a microcrystalline thin film, comprising:

supplying, during a first process, $SiH_4$ and $H_2$ to a chamber in which a substrate is located;

supplying, during a second process, $H_2$ but not $SiH_4$ to the chamber;

depositing a portion of the microcrystalline thin film during the second process; and

performing the first process and second process a plurality of times to form the microcrystalline thin film having a target film thickness on the substrate,

wherein supplying $SiH_4$ and $H_2$ during the first process comprises supplying $SiH_4$ at a first rate and $H_2$ at a second rate, the first rate and second rate defining a flow rate ratio that prevents a thin film formed on the substrate from becoming amorphous.

27. (Previously Presented) The method of claim 26, further comprising applying an electric field during the first process, the electric field set at an intensity that in combination with the flow rate ratio prevents a thin film formed on the substrate from becoming amorphous.

28. (Previously Presented) A method of forming a microcrystalline thin film by activating $SiH_4$, and forming a film having a microcrystalline structure on a film forming target object, wherein activating $SiH_4$ comprises applying an electric field to break down $SiH_4$ to $SiH_2$, the method further comprising:

performing a source supplying process in which $SiH_4$ is supplied,

performing a source depositing process in which the supply of $SiH_4$ is stopped and $SiH_2$ is deposited on the film forming target object to form the microcrystalline structure, and

supplying $H_2$ during the source supplying process and during the source depositing process, $SiH_4$ and $H_2$ being supplied at flow rates during the source supplying process to prevent a film formed on the film forming target object from becoming amorphous.

29. (Currently Amended) A method of forming a microcrystalline thin film, comprising:

supplying, during a source supplying process, $SiH_4$ and $H_2$ to a chamber in which a substrate is located, wherein <u>the $SiH_4$ is supplied at a first rate and the $H_2$ is supplied at a second rate, the first and second rates defining a flow rate ratio to prevent</u> formation of a layer of an amorphous film ~~is prevented~~ during the source supplying process; and

depositing the microcrystalline thin film on the substrate, wherein prior to depositing the microcrystalline thin film, the supplying of $SiH_4$ to the chamber is stopped.

30. (Previously Presented) The method of claim 29, further comprising:

applying an electric field in the chamber during the source supplying process to break down $SiH_4$ to $SiH_2$ molecules,

wherein depositing the microcrystalline thin film is performed during a source depositing process, and wherein a majority of the $SiH_2$ molecules is adsorbed on the substrate during the source depositing process to deposit the microcrystalline thin film on the substrate.

31. (Previously Presented) A method of forming a microcrystalline thin film, comprising:

supplying $SiH_4$ and $H_2$ to a chamber in which a substrate is located; and

depositing the microcrystalline thin film on the substrate, wherein prior to depositing the microcrystalline thin film, the supplying of $SiH_4$ to the chamber is stopped,

wherein supplying $SiH_4$ and $H_2$ comprises supplying $SiH_4$ at a first rate and $H_2$ at a second rate, the first rate and second rate defining a flow rate ratio that prevents a thin film formed on the substrate from becoming amorphous.